

# Notice of Allowability

Application No.

09/406,684

Examiner

Andrew Schechter

Applicant(s)

TSUDA ET AL.

Art Unit

2871

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the filing of 5 May 2005.
2. ☒ The allowed claim(s) is/are 8-14,17,19 and 22-122.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

## DETAILED ACTION

### ***Allowable Subject Matter***

1. Claims 8-14, 17, 19, and 22-122 are allowed.
2. The following is an examiner's statement of reasons for allowance:

The amendments of 6 December 2002 have overcome the previous rejections of claims 19 and 22 in view of *Ichimura*. The prior art does not disclose a method of forming an LCD with a reflective film using first and second photomasks with light blocking and light transmitting portions for forming asperities in a first region and contact holes in a second region of a photosensitive resin as recited by the amended claims. Claims 19 and 22 are therefore allowable, as are their dependent claims 8-10 and 23-25, respectively.

The amended limitation of claim 14 is that the exposure amounts of the first and second photomasks are the same. This is not disclosed by the prior art of record. When using a single gray-tone mask there is obviously only one exposure amount; however, the examiner is not aware of any motivation for using the same exposure amount when there are two distinct photomasks. Claim 14 is therefore allowable, as is its dependent claim 17.

The prior art does not fairly suggest using a single photomask with light-transmitting, light-intercepting, and semi-light-transmitting portions to form asperities and contact holes, in the process of making a reflective LCD. Claim 11 is therefore allowable, as are its dependent claims 12 and 13.

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Regarding the new claims 26-107 of 21 February 2003, these claims are also allowable over the prior art. Claims 26-28, 39, 50, and 106 recite a method of forming an LCD with a reflection electrode using first and second photomasks with light blocking and light transmitting portions to perform two exposures in first and second regions of a photosensitive resin. Analogously to claims 19 and 22 above, the prior art does not disclose this, so claims 26-28, 39, 50, and 106 are allowable, as are their dependent claims 29-38, 40-49, 51-97, and 107.

Claims 98-105 recite a method of making an LCD with a reflecting film by applying a positive or negative photosensitive resin, exposing a first region to form asperities, and exposing a second region. Claims 98, 100, 102, and 104 recite using a photomask with circular/polygonal portions, light-blocking portions, or light-transmitting portions which are 20-40% of the total area of the mask. Claims 99, 101, 103, and 105 recite using a photomask with circular/polygonal portions, light-blocking portions, or light-transmitting portions which have 5-50  $\mu\text{m}$  center-to-center distances. The claims further require a step of heat-treating the developed resin. The prior art does not disclose this, in any of the recited combinations. Considering the prior art of record, specifically: *Ichimura* does not disclose the limitations of 20-40% area or 5-50  $\mu\text{m}$  distances; *Mitsui '635* and *Mitsui '345* disclose using two resins (discussed in Paper No. 7); *Komatsubara* discloses wet etching instead of a photomask and photolithographic exposure; *Japanese Patent Document No. 9-90426* does not disclose a step of heat-treating the resin before forming the reflecting film. Claims 98-105 are therefore allowable.

Claim 108 has the limitations indicated as allowable of claim 28, so it is allowable for the same reasons as claim 28 discussed above, as are its dependent claims 109-113.

Similarly, claims 114, 116, and 118 are also allowed, as are their dependent claims 115, 117, and 119-122.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Schechter whose telephone number is (571) 272-2302. The examiner can normally be reached on Monday - Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Nelms can be reached at (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Andrew Schechter  
Primary Examiner  
Technology Center 2800  
23 May 2006